

### AMENDMENTS TO THE CLAIMS

Please cancel Claim 29.

Please amend Claims as follows:

1. **(Withdrawn)** An isolated or purified polynucleotide encoding a mutant mouse parkin2 protein, or a homolog thereof, wherein said mutant causes symptoms of Parkinson's disease.

2. **(Canceled)**

3. **(Withdrawn)** The polynucleotide of claim 1, wherein said polynucleotide is selected from the group consisting of: SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, SEQ ID NO: 19, and SEQ ID NO: 20.

4. **(Withdrawn)** A vector, comprising the polynucleotide of claim 1.

5. **(Withdrawn)** A cell, comprising the polynucleotide of claim 1.

6. **(Withdrawn)** The cell of claim 5, wherein the cell is a prokaryotic or a eukaryotic cell.

7. **(Withdrawn)** A parkin mouse protein, comprising any amino acid sequence selected from the group consisting of: SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 21, SEQ ID NO: 22, SEQ ID NO: 23, SEQ ID NO: 24, SEQ ID NO: 25, SEQ ID NO: 26, SEQ ID NO: 27, SEQ ID NO: 28, SEQ ID NO: 29, SEQ ID NO: 30, SEQ ID NO: 31, SEQ ID NO: 32, SEQ ID NO: 33, and SEQ ID NO: 34.

8. **(Currently Amended)** A transgenic ~~non-human mammal~~ mouse or rat comprising ~~an isolated or purified~~ a polynucleotide encoding a mutant mouse parkin2 protein, or a homolog thereof, said polynucleotide comprising a mutation, wherein said ~~mutant~~ mutation causes symptoms of Parkinson's disease when said mutation is present in a human polynucleotide homologous to a polynucleotide of SEQ ID NO: 1.

9. **(Canceled)**

10. **(Canceled)**

11. **(Canceled)**

12. **(Canceled)**

13. **(Withdrawn)** A mammalian cell-line transformed or transfected with the polynucleotide of claim 1.

14. **(Currently Amended)** A method of producing a transgenic ~~animal~~ mouse or rat, comprising:

constructing a vector that carries an isolated or purified polynucleotide encoding a mutant mouse parkin2 protein, or a homolog thereof, said polynucleotide comprising a mutation, wherein said ~~mutant~~ mutation causes symptoms of Parkinson's disease when said mutation is present in a human polynucleotide homologous to a polynucleotide of SEQ ID NO: 1;

introducing said vector into embryonic stem cells;

injecting said embryonic stem cells into blastocysts; ~~and~~

placing said blastocysts into a pseudopregnant female ~~animal~~ mouse or rat thereby impregnating said female; and

obtaining a pup as a result of such impregnation, wherein said pup is a chimeric mouse or rat.

15. **(Currently Amended)** A mammalian model for a neurodegenerative disease comprising the transgenic ~~mammal~~ mouse or rat of claim 8.

16. **(Canceled)**

17. **(Withdrawn)** A method for testing the efficacy of a treatment for a neurodegenerative disease, comprising:

subjecting the mammalian model of claim 15 to a putative treatment or agent; and

determining the efficacy of said treatment by identifying a reduction in the symptoms of said neurodegenerative disease.

18. **(Withdrawn)** The method of claim 17, wherein said neurodegenerative disease is selected from the group consisting of: Parkinson's disease, Alzheimer's disease, Huntington's disease, amyotrophic lateral sclerosis, Multisystem atrophy, Wilson's disease, Pick's disease, and Prion disease.

19. **(Canceled)**

20. **(Withdrawn)** A method for testing whether an active substance is useful for treating the symptoms of Parkinson's disease comprising:

administering said active substance to the transgenic animal of claim 8;

and

determining whether said active substance reduces the symptoms of Parkinson's disease.

21. **(Canceled)**

22. **(Currently Amended)** A descendant of the transgenic ~~animal~~ mouse or rat according to claim 8, wherein said ~~animal~~ descendant is obtained by breeding said transgenic mouse or rat with the same or any other genotype and wherein said descendant of the transgenic mouse or rat comprises a mutant mouse parkin2 protein or a homologue thereof.

23. **(Withdrawn)** The polynucleotide of claim 1, wherein said mutant comprises a point mutation, deletion or fragment.

24. **(Withdrawn)** The polynucleotide of claim 1, wherein said homolog is human.

25. **(Withdrawn)** The cell of claim 5, wherein said eukaryotic cell is a fungal, insect or mammalian cell.

26. **(Withdrawn)** The cell of claim 25, wherein said fungal cell is a yeast cell.

27. **(Withdrawn)** The cell of claim 25, wherein said prokaryotic cell is a bacterial cell.

28. **(Withdrawn)** The polynucleotide of claim 1, wherein said mutants comprise mutations in exon 1 or exon 3.

29. **(Canceled)** The mammalian model of claim 15, wherein said animal is a mouse or rat.

30. **(Withdrawn)** A method of testing agents for efficacy and toxicity in treating a neurodegenerative disease, comprising:

administering said agent to the mammalian model of claim 15; and

identifying whether said agent reduces the symptoms of said neurodegenerative disease or is toxic to said mammal.

31. **(Withdrawn)** A method for testing whether an active substance is useful for treating the symptoms of Parkinson's disease, comprising:

administering said active substance to the cell-line of claim 13; and  
determining whether said active substance reduces the symptoms of  
Parkinson's disease.

32. **(Withdrawn)** The method of claim 20, further comprising testing various dosages of said active substance.

**Please add new claims:**

33. **(New)** The transgenic mouse or rat of Claim 8, wherein said polynucleotide is selected from the group consisting of: SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, SEQ ID NO: 19, and SEQ ID NO: 20.

34. **(New)** The method of Claim 14, wherein said polynucleotide is selected from the group consisting of: SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, SEQ ID NO: 19, and SEQ ID NO: 20.

35. **(New)** The descendant of the transgenic mouse or rat of Claim 22, wherein said mutant parkin2 protein comprises an amino acid sequence selected from the group consisting of: SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 21, SEQ ID NO: 22, SEQ ID NO: 23, SEQ ID NO: 24, SEQ ID NO: 25, SEQ ID NO: 26, SEQ ID NO: 27, SEQ ID NO: 28, SEQ ID NO: 29, SEQ ID NO: 30, SEQ ID NO: 31, SEQ ID NO: 32, SEQ ID NO: 33, and SEQ ID NO: 34.

36. **(New)** A transgenic mouse or rat, comprising a polynucleotide encoding a mutant mouse parkin2 protein, or a homolog thereof, said protein comprising a mutation, wherein said mutation causes symptoms of Parkinson's disease when said mutation is present in a human amino acid sequence homologous to an amino acid sequence of SEQ ID NO: 4.